

# QUANTA

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**Volume 24**  
**Aug/Sept 2007**



**J**uly was said to be the wettest on record for many years. August has been, so far, much more like summer! Here's hoping we shall have been enjoying more summer weather by the time this magazine reaches you, and that the areas that unfortunately suffered flooding in July will have made progress towards getting back to normal.

I am looking forward to the QUANTA Workshop to be held in Birmingham on Saturday 6th October 2007, and I hope to see as many of you there as possible.

It will be the first time that a QUANTA Sponsored Workshop has been held there, and I know Mike Bedford White and his team have put a lot of effort into arranging it. Please support them.

By way of background you may care to note that in 2004 Geoff Wicks, then a Committee member, prepared a report on the Demographic Distribution of Quanta Members. It identified the Bristol and Midlands areas as possible places for workshops.

Committee accepted the prognosis. However whilst they were conscious of the many successful Workshops/AGMs that had been held in the Bristol area they were also aware that with no local Sub Group available,

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Quanta Magazine

# QUANTA

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## **Next QUANTA Sponsored Event** **West Midlands QL User Group**

**Present:**

### **The QUANTA Autumn Workshop**

**At “The Queen’s Head”, 28, Steelhouse Lane, Birmingham, B4 6BJ**

**On Saturday 6<sup>th</sup> October 2007 11am till 4pm**

**Watch later QUANTA and QL Today Magazines for full details.**

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running an event there was not a very practical option. The West Midlands area seemed more promising – perhaps Birmingham as an alternative to Manchester – Negotiations would be needed. Some things take a little time to achieve!

## **COMMITTEE MEETING PRECIS**

**Sarah Gilpin**

**T**here is very little to report for this magazine as both John Mason and Dan Abbott have been away. This does not imply that the committee has been totally inactive.

We are pleased with the confirmation of the workshop in Birmingham on Saturday Oct 6<sup>th</sup>. Mike Bedford-White is the organiser. Research reveals that two non-QUANTA Sponsored QL events took place there before 1997 and that this is the first QUANTA Sponsored Event. QUANTA looks forward to seeing members from all over the UK and overseas at this event. For further information see the advert in this magazine.

## **OBITUARY**

**Sarah Gilpin**

**I**t is with sadness that QUANTA learnt of the death of long standing member Paul Medinian on 21<sup>st</sup> July 2007. Many of us will remember this quiet man from the workshops that he visited over the years. At one time he tried to open a sub-group in the Folkestone area, close to his own home.

Paul was by profession a television engineer, and it was using this expertise that he made his greatest contribution to the QL community. Paul devised the wiring details for connecting the QL to monitors and TVs with a scart socket.

Paul's love of words led him to compile a 500,000+ word list that was used in the PWord dictionary for both Qword and Solvit.

At a time when QUANTA was struggling to find a new editor for the magazine, Paul offered his services. It is unfortunate that he found that the requirements of the job were more than he had time for and he gave it up after just one issue of the magazine. It is important to remember that at a time of need Paul stood up and offered his help.

Although Paul was unmarried he is survived by his siblings. Let us spare a thought for their sorrow at this time.

*(In this continuation of Hugh's GPS article, I have omitted any graphic images which have been printed in previous parts to save space - Ed).*

### Hardware

This is a chronological story of what I did so I start with PICs from Microchip (complete computers - well without unnecessary things like keyboards and displays --- on a single integrated circuit) which I have used for some years: I have built a couple of programming boards from Everyday Practical Electronics magazine (EPE)(12). I am grateful to this excellent magazine for many of the ideas I have used. One of the boards, 'Icebreaker' (EPE March 2000) has an interface to a PC (not the interface I added later to transfer data to QPC) so that you can single-step, examine registers, and all sorts, making writing your PIC program much easier and more effective. Among other peripherals it has an LCD, and a small breadboard area. And it has a convenient 5 v supply available, with plenty of oomph to drive extra circuitry.

In January 2004, EPE had described interfaces, to a PIC and a PC, for a commercial GPS hand-held receiver, too expensive for me. Then, in EPE January 2005 there was a 'Speed Cameras Watch' system for warning car drivers, based on GPS positioning and a data base of camera locations. Although I was not really interested in that particular project the receiver it specified (3), from Holux, was just what I wanted, so I bought one. I used the program from the 2004 article, modified to suit, in Icebreaker to display the output from the receiver on its LCD. However, as I said earlier, by carelessness with the leads I blew that receiver up: I connected the supply voltage to an output pin. If I hadn't destroyed it, the same interface that I describe here would have been applicable, but much simpler, the Holux receiver has wires rather than a ribbon cable and the PPS and ALMRDY outputs do not apply.

Later in 2005 I heard of a receiver by RF Solutions. GPSM001 (2), that suited me even better than the Holux module, as it had a 'Pulse Per Second' output (PPS) that I hoped to use in timing circuits, such as a frequency counter, although that project remains a long way off. I bought one of those, and determined to take much greater care this time.

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Figure 2

The biggest disadvantage of this GPS module, for me, was the close pitch of the 16 individual connections in its 8 mm wide ribbon cable interface. RF solutions provided a socket for the cable, but I dithered for months, considering various ideas, before attempting to make a PCB. to connect it to something more easily handled, but eventually I succeeded on the second attempt. The mm scale in **figure 2** shows the fineness of the lines needed. These were the first PCBs I had ever etched, but, untidy as it is, it works: it's also visible

in the photo of the board I took to Hove. It all had to be done using a watchmaker's eyeglass -- working a couple of inches from the board, the biggest danger was poking myself in the nose with the soldering iron. In the end I had a connection from the module's 16 pins to a 15-way D type plug: pin 15 of the GPS module is not used, so I left that one out. Now I have more experience I would only connect the few pins I use, that might make it easier next time.

### GPSP001 outputs and inputs

I'll deal with the circuit, figure 3, later on, but you might find it useful to refer to it now.

The GPS module requires a 3.3 V power supply at pin 3 of its interface, and an antenna which contains an r.f. amplifier supplied with D.C. power through its co-axial cable.

Of the fifteen pins, I used only seven. Several of the others need to be set to ground or to the 3.3 v Vcc, but they have internal 'weak pull-ups', which means that they are connected internally via a resistor to the 3.3 v, so that they can be left as they are for the default ("high"), or connected directly to ground to change the setting to "low", when the internal resistor limits the current flow from 3.3 v to ground to a very low level. I was able to leave these alone except for the baud rate, pin 4. The default baud rate is 9600. Tying pin 4 to ground changes this to 4800, expected by the program I intended to use.

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Pin 2 switches the module off if tied to ground: I found that gunge left over from my soldering was enough of a 'tie to ground', by connecting the adjacent 2 "OFF" and 1 "GND" tracks on my little PCB., to keep it all turned off until I cleaned up.

Data from the GPMS001 is sent as binary ASCII codes from TXA, pin 7, in binary form, zero volts is a 'zero' bit and 3.3 V is a 'one'.

To understand the ALMRDY output of this device, we need to look into the way it works. To calculate its position, when in use and working happily, the GPMS001 needs several sets of data, which are stored in its non-volatile memory when it is switched off. One requirement is the stored datum for the mathematical model of the earth's surface, the standard and default being WGS84, this is valid for years unless you change to a different ellipsoid model, and is built in by the manufacturer. Second is the 'almanac', which is generally valid for some months. Third is the 'ephemeris' which changes hour by hour. As I said earlier, both the latter may have to be downloaded from the satellites themselves before a fix can be attempted, unless the switch on is very soon after the previous 'off', and the data are still valid; and they are then kept updated while the unit is on. One output from the GPMS001, on pin 11, is 'ALMRDY', which goes high when either the stored almanac is confirmed as valid, or a new, current one, has been received. Correct ephemeris received is, I assume, signalled by the "Status" field in the \$GPRMC line of the output data changing from "V=void" to "A=active". Among the other data, the current position is also stored, and used as a starting point for checks when it is switched on again. After several months 'off' it took nearly an hour after I first switched on before it gave a valid position, although some of that may have been due to my ignorance, -- I may have accidentally kept it turned off with pin 2, the on/off command pin without realising it, as I mentioned.

The device has an on-board clock, which starts up as soon as power is supplied and is synchronised with UTC when a valid signal is received. At pin 8, PPS, normally low, a 'pulse per second' is output, which is correct to within 0.4 milliseconds (mS) of UTC at the rise of an 83mS long pulse.

The other inputs and outputs are to do with power saving, back up power supply, and customer modification of the default operation. I have not investigated any of these.



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## Construction

My first success was to have the results displayed on the Icebreaker LCD, with the interface to GPSM001, which I'll describe soon on its breadboard, and the different items lying around on the bench. A 12 V D.C. supply plugs in at the top of the Icebreaker.

On the Icebreaker bread board I also rigged up LEDs to display ALMRDY and PPS; with latitude, longitude, date and time on the LCD, using a modified EPE program in the PIC.

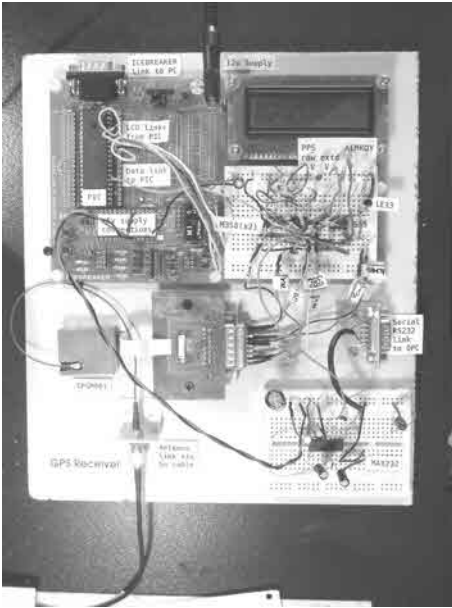


Figure 1

To be able to carry the set-up around, I screwed the various parts to a board, **figure 1**, demonstrated at Hove. The Icebreaker PCB. is across the top, the PIC is the large black I.C. on it. The GPSM001 is the silvery object at the left, lower down. On its right is the small PCB. with the interface to the ribbon cable, and a D type plug with wires to the rest of the circuit. Below the GPSM001 is a socket with the lead from the antenna. Later on I added, at the right at the bottom, a second breadboard with the RS232 driver for the PC interface, and above that the D type socket for the connection to QPC. At the top of the board is the Icebreaker's own D type socket, which I did not use after downloading the program to the PIC.

## Operational amplifiers

The circuit I use is based on operational amplifiers (op-amps). If you are familiar with op-amps then the next couple of paragraphs will be old hat, but I am told that the main complaint about QLToday articles is that they are too technical, so I am trying to write this for those unfamiliar with electronics, as well.

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Operational amplifiers were originally developed as central parts of analogue computers used to solve mathematical problems before digital computers became the norm. Built from valves they were big and power hungry. They were drawn in diagrams as the sideways triangle you see on my circuit, and that convention persists even though the mathematical use is now a very minor one. In the 1960s the first operational amplifiers on an integrated circuit chip were invented, one of the originals, the 741, is still popular and was closely followed by a variety to suit every purpose. Basically they are very high gain D.C. amplifiers, requiring virtually no current into their inputs, and capable of giving a reasonably high current at their output. If the two inputs are kept at the same voltage, then the output is zero. A very small difference in the inputs causes a large voltage swing at the output. The inputs are labelled '-' and '+', or 'inverting' and 'non-inverting' respectively: if the '-' input is regarded as the zero reference, then a small increase in the '+' input voltage cause a positive swing in output, and conversely, regarding '+' as zero reference then a small positive voltage on the '-' input causes the output to go negative, i.e. inverted. The 741 requires positive and negative supply voltages to give an output swing above and below zero.

This very simple model is not realised in practice: a slightly non-zero difference in inputs is needed to give a zero output, and often connections are provided to nullify this offset, and other slight problems, externally. In the present application this doesn't matter as the input swing is wide enough

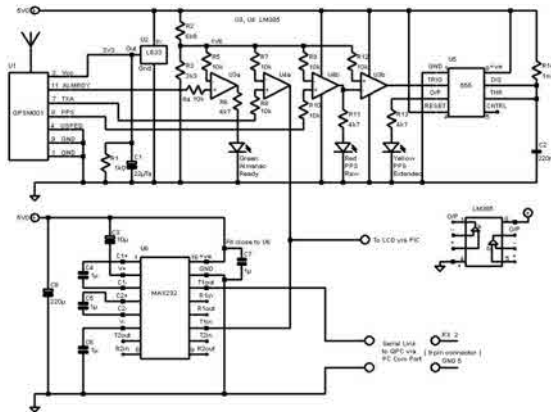


Figure 3

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to swamp any of these effects. I am not describing here the circuitry to use them as linear amplifiers, that's in all the books.

The LM358 that I use is a useful general purpose, cheap, chip: two op-amps in an 8 pin package as shown on the circuit diagram, with an output swing between just above zero to about 1.5 V below the single-sided supply. The internal connections are shown on the circuit diagram. I used two, I could probably have used a 'quad' version but the 358s were already in my "come in handy" stock.

If you're not already familiar with the notation for resistor values, such as 4k7, here is an explanation. A decimal point can easily be overlooked in a circuit diagram, or a spot can be mistakenly read as one, so it is common now to use the multiplier, k (kilo) or m (mega) in place of the decimal point, so 4k7 is 'four point 7 kilohms'. For resistors under 1k0, R is used for the point, so that '220 ohms' is 220R and 'four point 7 ohms' is 4R7. To avoid confusion with R1, meaning 'resistor number one', 0R1 is used for '0.1 ohm'. I use a similar idea for voltages.

The Icebreaker provides a smooth 5 V supply which can be used directly for most of the components, but the GPS module requires a 3.3 V supply, provided by the LE33 Voltage Regulator. Tantalum capacitor C1 is recommended in the data sheet, and I added R1 to load and test the output before I connected the GPS, so it could be removed now (but CBB and IWSWFI). Two GPMS001 pins are 'GND' and the data sheet gives no special instructions, so they are both tied to zero volts.

I will mention here something that I discovered much later: the ribbon cable fits into a socket in the receiver, and unwittingly I had loosened this, and the cable twisted sideways, shorting the power line to ground. It was a good test of the thermal limiting of the regulators, the GPMS001 should draw 30ish mA, it was 300odd mA when I measured it. Alerted by the hot smell from the Icebreaker's voltage regulator, it was a fright until I found the cause and put it right. A relief to find the receiver had survived it all and worked again.

The only input from this circuit to GPMS001 is at pin 4, USPED. Left open this makes the output baud rate 9600. By tying it to ground I get 4800 to match the program in the PIC. I could have changed the programs to all work at 9600 baud, but I was keen to see if it worked, so CBB.

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The outputs of the GPMS001 swing from near zero to near 3.3 V. To protect them I use the op-amps as buffers, so that the current drawn from the GPMS001 is negligible, nano-amps, and the op-amps supply the currents, a few milli-amps, to drive the LEDs.

*(Hugh tells us that there is an error in Figure 3. The LED current limiting resistors shown as 4k7 should all be 470R. Apologies from Hugh – Ed)*

All in my circuit except the GPMS001 uses 5 V logic. So, rather than investigating and using a possible 3.3 V approach (CBB), the op-amps are wired as comparators to convert the 3.3 V levels from the GPS module nearer to 5 V to suit the PIC and other devices. R2 and R3 form a potential divider across the 5 V supply, so their junction is at about 1.6 V, and is applied to one '-' input of each of three op-amps. The outputs of the GPMS001 applied to the '+' input swing above and below this, so the outputs of the op-amps do the same. (U3b is different -- I'll come to that.) Maximum allowed output current is about 40 mA, plenty to drive an LED. I am obsessed with avoiding damage to the GPS module, so, to this end I have put 10K resistors in all the low current leads, for further protection if a high voltage gets accidentally applied. A lot of these could be left out, I suppose, but IWSWFI rules yet again.

The simplest output is ALMRDY which turns on the green LED. All LEDs are fed via a 4k7 resistor which, with the voltage drop across the LED allowed for, gives about 3.3 mA.

When I first tried to see the PPS, via U4b, the brief flash was almost invisible, so I added the 555 timer to extend the pulse to about a quarter of a second, using a monostable circuit straight out of the book, with duration set by R14 and C2. I couldn't find a 555 monostable circuit triggered by a rising edge, so I used U3b as an inverter by reversing its inputs. Since the pulse from GPMS001 is so short it would not really matter here if the 555 was triggered by its falling edge, but I had an op-amp spare for it.

After admiring the display of my home latitude and longitude on the Icebreaker LCD for a while, I looked for even more excitement, and found it in the movement of the satellites in their orbits across the sky. Among the data sent out of the GPMS001 each second are the bearing and elevation of the satellites in view. Plotting these on a PC screen should show their movement nicely. It did - see figures 5, 6, 7, and 8. *(These figures were shown in the April/May issue of Quanta Magazine pages 5 and 6 – Ed)*. This is what I showed at Hove.

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To do this needed an input to the PC, and EPE of January 2004 described an interface. In fact it is again a 'straight off the data sheet' use of a Maxim MAX232 chip, which does the conversion between 5 V logic levels and the plus and minus 12 or 15 volts of the RS232 standard used by a PC's serial COM ports. I mounted it on the second small breadboard. In my diagram, C3,C4,C5,C6, and C7 are as recommended in the data sheet for the MAX2332. I only use one of the four channels provided, namely T1 to transmit data to the PC. C8 is a precaution as the 5 V power lead to the board is getting a bit long.

## **SALES AND WANTED**

**John Gilpin**

### **Wanted:**

**E**xternal disk drive units (or cases) - single or dual units. There must be plenty out there from people who have upgraded.

### **For Sale:**

- 10 - Epson Stylus Colour 850 printers
- 2 - Epson Stylus 900 printers
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All **ONLY** £40.00 each plus £15.00 post and packing

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[rich@rwapservices.co.uk](mailto:rich@rwapservices.co.uk)

### **Wanted:**

QUANTA are always on the lookout for Second User QL related items which are no longer required by their owner.

Do you know where there is some hardware, Software (original) books etc laying about doing nothing? Give me a call or send me an email.

John Gilpin QUANTA Treasurer. Contact details inside front cover.

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## For Sale:

QUANTA have the following second user Items for sale:

Reformatted Microdrive Cartridges - 4 in Plastic Wallet - £0.30  
(Last few remaining - First Come, First Served)

And

Reformatted 3.5" DD Floppy diskettes - £0.20 ea - 10 for £1.50  
100 for £11.50

Jan Jones' Book "QL SuperBASIC - The Definitive Handbook"

This is the book which no QLer can afford to be without and the one which QUANTA did a Limited Reprint Edition in 1989 after the original print run sold out so quickly. **A Real Bargain at £1.00 each. (Last few remaining)**

All the above items are subject to post and packing charges at cost.

Enquiries to [treasurer@quanta.org.uk](mailto:treasurer@quanta.org.uk)

## INPUT DETAILS

**Steve Poole**

**F**rom time to time, the Beginners Guide omitted all explanation for certain characteristics of SuperBASIC. Today I am going to give the case of INPUT with parentheses.

Most of you will know that INPUT will accept a text-string to print before actually flashing the cursor, whilst waiting for the required variable. But it can do much more than this: Run the listing and enter some numbers at each input cue. Then study the listing. Note that INPUT will accept any values between brackets or those linked by ampersands [&], as PRINT items, those values outside the brackets being treated as INPUT variables! There is also a syntax quirk that INPUT with no parameters does nothing!

Note that lines 220 and 240 function identically, the latter being much clearer to understand when brackets are used. Then look at line 260: In fact, Input will accept all the print separators, being; !, / and of course TO. In this way you can avoid such lines as:

```
100 AT 1,1: print 'number': AT 1,5: INPUT number
```

Lines 260 and 280 are identical in function too. I think using the extra semi-colon separators is more consistent. SuperBASIC can be very supple

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sometimes! (In general I think the best rule is to keep things simple).

This little article was inspired by some confusion I found whilst writing code for Quanta recently. So after a little experimentation I thought other members might like to see the results of this revision too!

## Best Wishes

```
100 ::
110 REMark INPUT_bas, by S.Poole, v25oct2006
120 CLEAR: OPEN#1,con_128: WINDOW 256,206,256,0: CLS
130 AT 4,1
140 b$="b": INPUT b$
150 AT 6,1
160 b$="b": INPUT (b$)
170 AT 8,1
180 b$='b': INPUT "a";b$
190 AT 10,1
200 b$='b': INPUT "a";b$;"c";d$
210 AT 12,1
220 b$='b': INPUT "a"&b$&"c";d$
230 AT 14,1
240 INPUT ("a"&b$&"c");d$
250 AT 16,1
260 INPUT TO 4; ("a"&b$)!d$ TO 12; ("e"&b$) TO 16;e$
270 AT 18,1
280 INPUT TO 4; ("a"&b$)!d$; TO 12; ("e"&b$); TO 16;e$
290 ::
```

End of listing.

## THE SOUND OF SILENCE

**Geoff Wicks**

**T**wo items in the April/May 2007 Quanta Magazine caught my attention. It was a fascinating juxtaposition made all the more delicious by the fact that the writers are man and wife.

On page 12 Sarah Gilpin wrote:

"The Committee is to look into a 'party' in 2009 to celebrate the QL's quarter century. It was suggested we should invite all QL users (and not just QUANTA members) to join us for this. Input from members would be welcomed as soon as possible regarding possible format, location etc."

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On page 13 John Gilpin wrote:

"I'm not even going to hold my breath while the emails flood in to my inbox as you tell me if you are interested in a Christmas Challenge or not. I don't think that the QUANTA Magazine has ever published a 'Letters to the Editor' article."

The last time Quanta held a major event was "QL is 21" in 2005. At the time Quanta had about 240 members, but the attendance at "QL is 21" was just 42 and that includes several non-members. "QL is 21" cost Quanta the equivalent of the subscriptions of over 220 members but fewer than 35 members attended. Was this a good use of Quanta's money?

(That is a question not an opinion. If Quanta wasted members' money in running "QL is 21" then I am the chief culprit, because I was the person who campaigned most vehemently for this event.)

Quanta now has approximately 200 members.

Out of 200 members only 4 are prepared to sit on the committee.

Out of 200 members only 9 are prepared to write for the Quanta Magazine.

Out of 200 members only 15 attend the AGM, although another 12 show their interest by using their proxy votes.

Out of 200 members only 30 attend Quanta workshops.

I do not know how many members attend the subgroups. I expect it to be higher than the workshop attendance, but I doubt if it exceeds 40.

In other words for every five Quanta members four play no part in the life of the organisation other than to pay their subscription. I ask myself time and time again. What do these people get out of Quanta? Why do they stay in the organisation?

Quanta has an amazingly diverse membership with levels of QL use from simple black box to all bells and whistles systems: and levels of skills from simple Quill and Abacus users to top programmers and hardware specialists. John Mason reminded us of this diversity during the AGM when he said that 30% of Quanta members use QPC2 and 30% only a basic QL.

This diversity is a major headache for the committee because they have a duty to give a good service to all members whatever their level of hardware and skills. There are many things they cannot do because it is not suitable for all



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members. For example, Quanta could send every member a CD of the complete Quanta library once a year, but then we know that over 30% of the members do not have the hardware to run it on. Even a cover disk is impossible. Just what software could you include on it that would be of interest and relevant to all members?

The committee's task becomes even harder when no one bothers to tell them what they want. Indeed it is very difficult to maintain your perspective of what members want when you regularly see one fifth of them, but hear nothing at all from the other four fifths.

This problem was brought home to me very forcibly during the 2004 survey when we discovered the number of Quanta members still using a simple black box and Microdrive was much higher than we had expected. We discovered they were a very angry group of members who felt they had been spurned and neglected by Quanta and the rest of the QL community.

At the time I was responsible for the Quanta helpline and John Mason and I were anxious to provide a better service for this group, but we did not know how. The black box users were very angry, but they rejected all our suggestions for possible ways of helping and did not give us any alternatives. We could not even make a start in improving our service to them.

In fact when I was running the Quanta helpline I only received two direct requests for help and one of those was outside my remit as the member wanted to know if a trader was charging fair prices. I made up practically all the topics in my helpline column based on conversations I had with people at shows or who had contacted me as a trader. I thought I did a good job writing the helpline, but I could have done a damn sight better with more feedback. I would love to know whether Quanta's silent 80% appreciated my column or not.

The service that all members, whatever their level of hardware or skills, do receive is the magazine. Over the years the magazine had been allowed to deteriorate into a sorry state until it had almost become a joke. During the last two years John Mason and John Gilpin have transformed the magazine back into a serious QL publication. How many members have had the decency to say "thank you"? As far as I know only two of us have said "thank you" in public.

Quanta would be a lot better as an organisation if more members told the committee what they would like to see. It does not have to be a full article for the magazine. In fact it does not have to be for the magazine at all. A simple letter or email saying what you would like would be sufficient, even if it were no more than a thank you for something done well. (Or a rebuke for something done badly.)

# Quanta Magazine

Recently Quanta has been looking at the question of how to deter people from wasting the organisation's time and money by calling for a Special General Meeting to debate a frivolous motion.

Frankly if 20 people were to propose a frivolous motion and pay £300 up front I would be jumping up and down with joy screaming "Hallelujah". Not because I want to cause Quanta problems, but because it would be 20 people taking an active interest in the organisation.

*(A Club such as QUANTA, which has been running for 25 years has, by any reasonable standard, good cause to mark and celebrate the event.*

*QL2000 and "QL is 21", like all QUANTA sponsored happenings, were open events to which all-comers including non-QUANTA members were welcome. QL is 25 will be likewise. The decision to attend or otherwise will be a matter for the individual.*

*Viewed overall, QUANTA Funds used this way are well and properly spent for the benefit of the whole. Moreover, they provide sparkle, boost morale and give a feeling of well-being. - Ed)*

## QUANTA NEWS

John Gilpin

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### Cocktails Waiter

The formerly commercial program Cocktails Waiter has now been released as freeware and is available from the Miscellaneous Programs page on my website.

Cocktails Waiter contains 3 databases totalling about 1,000 cocktail drinks recipes. You can search, print, view and select cocktail recipes by ingredients or by names. Although not specifically intended as such, it does have facilities to set up new databases so could probably be used for cooking recipes as well.

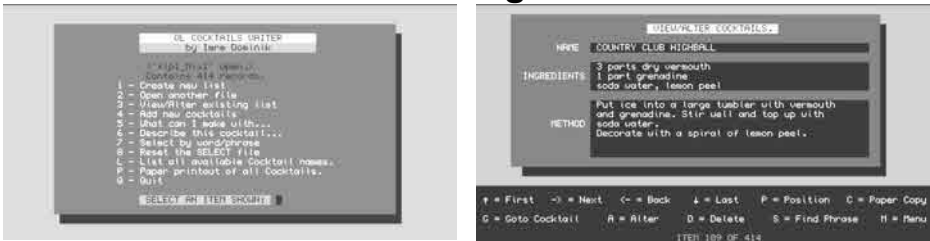
Unfortunately, I do not have access to the source files for this program, but the databases are standard Archive databases so could be exported for use with other QL database programs such as Data Design or Easybase. I have also updated the manual.

This program is \*not\* an excuse to turn up anything less than sober for a Quanta AGM, of course! The program can be downloaded from:

<http://www.dilwyn.uk6.net/misc/index.html>

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# Quanta Magazine



Two Screen shots from Cocktail Waiter

## Converter Programme by Dilwyn Jones

I'd like to request some help with testing a program I've just put on my website.

It's an updated version of a program I wrote back in 1986 (I think). It's one of those ubiquitous MDV to FLP converter to help with moving software from one medium to another. It's not just MDV to FLP, you can replace any string with any other of the same length, so, for example, if moving software from Microdrive to a single floppy disk system you could try two passes, one replacing MDV1\_ with FLP1\_ and the second replacing MDV2\_ also with FLP1\_. And for help with moving software to hard disk, you can probably replace MDV or FLP with SUB or DEV if the software does not have the ability to reconfigure readily for running from hard disk directories, for example.

The reason I need help is that it uses ancient code, and the original was badly written (by me), for example, hard coded references to system variables, compiled with an early DP compiler and other excuses you can think of. I've tried to update it over the last week or so and it SEEMS to run OK on QPC2, implying I may have actually managed to get rid of the bad bits.

It will only run on systems with Window Manager version 2 or later, so you'll need either SMSQ/E version 3.00 or later, or a QDOS system with pointer environment version 2.00 or later so that the program can use the System Palette.

It's been placed on the File Handling programs page for download, anybody who wants to try it can download it from [www.dilwyn.uk6.net/files/index.html](http://www.dilwyn.uk6.net/files/index.html) make sure you get the right version (the one with my name alongside it) called converter.zip, roughly a 45K download, as there's an old program of

# Quanta Magazine

the same name by E. Verbeek on the same page. Anybody brave enough to try it, please let me know what system you tried it on, whether it worked or not and what (if any) error messages you get, and thank you in advance!

It's been quite a challenge rewriting something this badly written from that era into an equivalent modern GD2 program, so I hope it works!

Dilwyn Jones

## DJ Software Updates

I have placed three updates to my programs on my website:

**1. Launchpad** 2.07 demo version and full version update (for registered users via password protected zip file). To download, go to the Launchpad page on my website and follow the links to the downloads page. V2.07 fixes a small problem in the program window resize routines, allowing the resized display to appear at a more logical position than the semi-random positions generated before, and updates the Easyptr extensions to latest versions, and a few code tidy-ups.

**2. Q-Trans** v2.06 also fixes the same problem in the resize routines and also updates the Easyptr extensions used. It may be downloaded from the same page as Launchpad above. Note that Q-Tans itself is freeware, you do not have to be a registered user to be able to use Q-Trans as a stand alone file handling program.

**3. Zip Manager** v1.02 fixes a bug whereby the program would not run on a 512x256 QL display because of a problem with program shadow size, and also fixes a potentially serious bug in the configuration block, along with introducing a couple of new items in the configuration setup. This program update can be downloaded as a zip file from the Archiver's page on my website. Zip Manager is a freeware program.

As usual with my recent programs, all require the use of Window Manager 2, which basically means you should be running SMSQ/E v3.00 or later, or QDOS with pointer environment v2.00 or later.

The updates can be downloaded from their respective pages on my website, at:

<http://www.dilwyn.uk6.net/index.html>

*(QL News is continued on page 23 - Ed)*

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## TRADER'S CORNER

QUANTA recommends the following trading members to supply all your QL requirements, information and advice.

Trader's Advertisements can be viewed at:  
<http://www.quanta.org.uk/traders>

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*(QL News, Continued from page 20.)*

## **Success continues with version 2.05.      Bob Spelten Jr.**

**T**he upgrade as presented in Eindhoven still had some bugs but I hope I have fixed them all by now.

The biggest change is in the ability to use subfields. Text fields can be divided into subfields by a linefeed character. Fields up to 4000 characters can now be used. This had major implications for the Export, Import, Edit, Scrap and Print routines.

Export will convert the linefeed character to a vertical line so that other Import programs can safely be used. Although exporting for Psion will limit fields to 253 characters.

Import can now handle fields larger than 128 characters but the lengths must be input for each text field.

Text Editing can be done as one long string or as an array with each subfield on a separate line. Texts can be split or joined into subfields.

The Edit window can also be used to just view long fields with editing disabled.

Copy-to-File with TAB's between the fields, can now also include the field names.

Printing can be done in columns as in the main display or in rows like the View window and with record numbers. Then the field names can also be printed.

A DO on a not selected field, when some records are selected, will now let you edit this field and not open the View window. Only a DO on a selected record will open the View window.

When you are on the last of a group of selected records in the View window and you hit the <+> line, "End of selection" now lets you go back to the last viewed record.

In the Find menu the Case On/Off option can actually be used.

The Readme, Changes and Help files that come with the program

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hold more details on improvements and bug fixes.

As always, full working copies (in English, German or Dutch) can be obtained from Jochen Merz Software or Q Branch.

The English trail version on Wolfgang Uhlig's site: [www.uhlich.nl/q/](http://www.uhlich.nl/q/) is still the 2.04 version. My site is still under construction but the new 2.05 can be downloaded through there <http://members.upc.nl/b.spelten/q/>  
This is actually a link to the Dilwyn Jones site: <http://www.dilwyn.uk6.net/demos/index.html>

Bob Spelten jr [bsjr@chello.nl](mailto:bsjr@chello.nl)

## NEXT KEYWORD

Steve Poole

---

**T**he Beginner's Guide makes a brief mention of the keyword NEXT as used by SuperBASIC loops, and Jan Jones also briefly refers to it. But reader's letters in the past reveal that the use of this command can be confusing. So here are a few examples of how to use it:

List 1: The language's developers included the NEXT keyword for compatibility with other Basics. See how NEXT simply terminates the FOR loop in the eyes of the interpreter.

List 2: SuperBASIC adapted the use of NEXT, to extend it, so as to be able to implement 'loop epilogues'. "End" is only printed when f has incremented to 9, when the loop 'falls through' Line 270.

List 3: Line 330 does here what most programmers at first expect NEXT to do: It allows the rest of the loop to be processed before the loop terminates, except where requested otherwise. This is much more flexible and proves that GOTO's are indispensable to SuperBASIC, despite frequent comments to the contrary.

List 4: Here we see how useful it can be to get back into a loop after we have quit it (via another use for NEXT).

List 5: This is an example of how unfriendly the SMSQ/E 'nameless' loops are: When several loops are nested it can be horrendous to unravel what the code intends to do. Normally, if we were to remove the REMark keyword on Line 530, we would expect NEXT to function as in SuperBASIC.



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This is not the case, as the interpreter halts with an error message.

My advice is this: abandon un-named loops (except for the very simplest cases if you really have to). And use NEXT, like GOTOs, with parsimony. Whatever NEXT...

Best Wishes,

```
100 ::
110 REMark NEXT_bas, by S.Poole, v25oct2006
120 REMark for Quanta.
130 :
140 CLEAR: OPEN#1,con_32
150 WINDOW#1,256,206,256,0: CLS
160 ps=100
170 :
180 PRINT'List 1:'
190 FOR f= 1 TO 9
200     PRINT f!
210 NEXT f: i$=INKEY$(#1,ps)
220 :
230 PRINT\\'List 2:'
240 FOR f=1 TO 9
250     PRINT f!
260     NEXT f
270     PRINT !'End'
280 END FOR f: i$=INKEY$(#1,ps)
290 :
300 PRINT\'List 3:'
310 FOR f=1 TO 9
320     PRINT ;f!
330     IF f=5: PRINT;'!';: GO TO 350
340     IF f=9: ELSE PRINT;',!'
350 END FOR f: i$=INKEY$(#1,ps)
360 :
370 PRINT\\'List 4:'
380 ct=1
390 REPeat loop
400     PRINT ct!: ct=ct+1
410     IF ct=5: EXIT loop
420     IF ct=9: EXIT loop
430 END REPeat loop
440 IF ct=5: PRINT;':':: NEXT loop
450 i$=INKEY$(#1,ps)
460 :
```

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```
470 PRINT\\'List 5:'
480 ct=1
490 REPEAT
500     PRINT ct!: ct=ct+1
510     IF ct=10: EXIT
520 END REPEAT
530 PRINT;':':; REMark NEXT
540 ::
```

End of Listing.

## BACKPLANES EXPLAINED

**Dilwyn Jones/Tony Firshman**

---

**B**ackplanes are basically a board with two or more QL expansion connectors on them.

Some of the older ones were little more than two or three QL expansion connectors soldered to each other in parallel - companies like Miracle, Simplex and Adman did simple ones like this in the early days. They usually worked (not always!) when all you wanted to do was plug a RAM card and disk interface together into a QL.

Most backplanes have been devices with 3 or more card connectors, a power supply connection and some degree of buffering on the lines from the QL. CST made one called a Q+4 which was a huge great metal cased unit which sat under a QL with a ribbon lead connecting it to the QL expansion connector. You could plug up to 4 circuit boards into it, but if more than one of the cards had a ROM on board, it ran into problems with version AH or JM ROM QLs which could only link one expansion card ROM into the system. JS and MG and Minerva should all be fine.

The MPlane and QUBBESoft's QPlane were both designed to help with putting QL and Aurora circuit boards into PC style cases - they helped you with getting the QL or Aurora and the expansion cards to work from the PC case power supplies, and of course helped shorten the system because you didn't necessarily need to have a Super Gold Card plugged into a QUBIDE plugged into a QL board for

## Quanta Magazine

example, because the backplanes can be mounted in such a way that the boards mount alongside or above each other to avoid the length problem.

If I may cite a simple example, I have a Minis-QL. This is essentially an Aurora with super gold card, QUBIDE and Mplane. The case is an old Epson one, only 12 inch wide, 9 inch deep and 2 inches high. Yet this case, thanks to Mplane, contains a floppy disk drive, hard disk and RomDisq in addition to the other cards, the only thing which didn't fit in the case is a power supply, which is almost half the size of the case! MPlane was well thought out and designed to enable all these cards to be plugged together in quite a compact footprint.

### Tony

Mplane was designed precisely for the minisQL and Aurora. I even had an option for inward or outward facing ROM connector, and there is on-board -ve voltage generation for SER.

The PC case use was incidental.

In designing the connector positions, I offset one of the connectors for the never-to-be Goldfire. Nasta needed space for RAM chips. By an amazing bit of luck, this allowed a SGC when used with the original QL motherboard, to overlap. It does need the ROM port removing (it is on Mplane in any case) and CTRL1. Even more of a coincidence is that a hole on the QL PCB lines up perfectly with a hole on SGC, allowing the two to be screwed together.

The older back planes, including Qplane, were not too effective when used with the QL motherboard due to signal noise. Mplane does much better in this respect. It has both power and ground planes in inner layers. Qplane was though an awful lot better than any preceding backplane mainly due to its ground plane and smoothing capacitors. It was though only a two layer board.

None of the backplanes I know, including Qplane and Mplane, have any buffering.

I was very interested to read your article in Vol.23 Issue 5 of Quanta and having noted that you expressed a desire to learn from others, regarding their own particular setups I thought that perhaps a description of mine might be of interest.

I have a number of computers currently in action, 4 of which are setup for different systems - computers having become my over-riding interest since my retirement -

System 1 [Windows XP]

System 2 [MS-DOS]

System 3 [FreeBSD]

System 4 [QL]

This indicates that I have done quite a bit of 'tinkering' since my ZX81 days. I have to say however, that QL is my first and main preference since it is such an innovative medium and also, I am and always have been much taken with the Psion Suite, which I use regularly, particularly Archive and Abacus. I have, I think, pretty well most of the book material that has been written apropos the QL both concerning its software and its Hard/Firmware.

I bought my QL just at the time the price was halved and have added to it pretty well ever since so that in its present form it resides in a somewhat hybrid case which I had made more years ago than I can remember. The case is physically similar to a desktop PC case and indeed, was made by a chap who specialised in cases that could house the basic QL hardware. I have, however, adapted the case so that it contains a Main board, a SGCard, 4 Floppy drives [2xDD and 2xED], also, I have included a fan, which keeps things cool inside the cabinet. This seems to work alright because [fingers crossed] I don't suffer with heat failures and I have only the standard heatsink fitted. I use a DI-Ren keyboard interface and a standard PC 102 key,

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keyboard. I have a further two working QLs, a QXL board and 2 Emulators [QPAC2 and QemuLator] the second of which, at the moment, I feel more comfortable with; as and when I feel inclined to use them. This isn't very often since I have only recently been able to replace my defunct, original Mitrovitec 'Cub' Monitor with a second model of the same type and am happy to report that the whole setup is working quite well. I hope I am not tempting providence by saying this.

I have always been inclined towards the textual approach, particularly now that my eyesight does not cope all that well with prolonged GUI viewing; I also have no interest in games and for the most part regard my QL setup as a purely 'in house' medium so that I have no particular desire to use it in an Internet context. This being so, I find that exploring the 'quirks' and 'idiosyncrasies' of QL Software more than satisfies my current computer aspirations. I am of course a Web surfer insofar as I like to keep abreast of things which might be of interest, particularly with regard to my QL penchant. For my Web surfing, I use a Windows XP PC; I subscribe to Quanta and QL Today and browse through the various QL Links. I very much enjoy Dilwyn Jones' Website, as well as the articles he contributes to both Quanta and QL Today; if I may say so, he writes in a way that I can understand. I am not a Computer Geek - as they say; I'm not by any means definitively versed in most aspects of Computerism but I have the respect of age, in the wonders of modern technology and the advances therein. I have, on occasion expressed my sincere and heartfelt respect and admiration for the contributions Dilwyn and others in the QL fraternity have made towards its development and continuity. I would like you to regard these expressions as a genuine indication of an appreciation of that which has made my venture into the QL world such an enjoyable experience; I have no need, at 85 years to covet such advantage as might accrue from any false plaudits and see no value in such transparently empty offerings.

*Thanks for sharing this with us Albert. Now that we've got the ball rolling, does anyone else care to share their QLing experiences, likes and dislikes with us all? Contributions to: - [editor@quanta.org.uk](mailto:editor@quanta.org.uk) or by snail mail - my address is inside the front cover - John Gilpin, Joint Editor, Quanta Magazine.*

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## AUTUMN WORKSHOP

Mike Bedford-White

---

**F**ollowing an offer to organise a QL Workshop, Quanta have asked Mike Bedford-White of the West Midlands QL User Group to plan and organise a workshop in the Birmingham area. Plans for this are now well advanced and the details for what promises to be a good day out for all QLers (Quanta members or not) are outlined below:-

**DATE:** Saturday October 6th. 2007

**VENUE:** "The Queen's Head" 28, Steelhouse Lane  
Birmingham. B4 6BJ

**TIME:** Due to Licensing Rules, admittance from 11.00 am.  
to 4.30 pm.

**PARKING:** Recommend you use the Multi-storey Car Park at  
the bottom of Whittall Street - about 200 yds. from  
the venue.

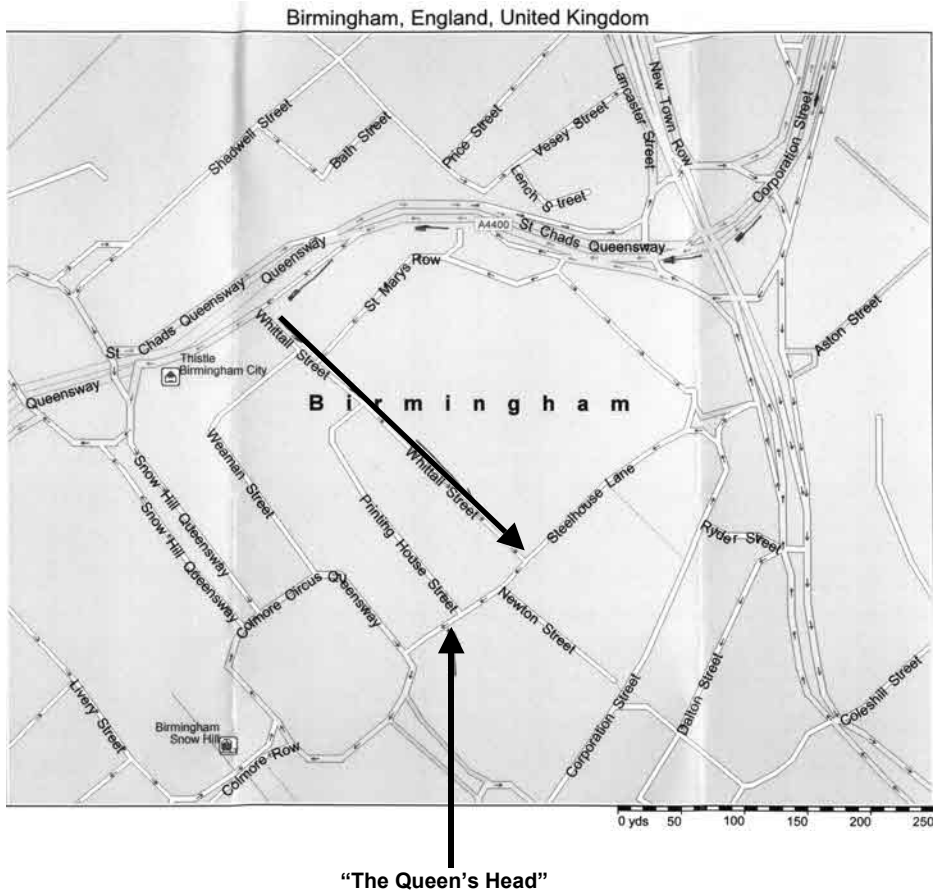
**Directions:** From North East via M1, A42, M42, M6 (J6) then see \*\* below  
From North West via M6 (J6) then see \*\* below  
From South East via M1, M6 (J6) then see \*\* below  
From South West via M5 Leave at J3 (Signed B'ham West &  
Central) then at roundabout (**1.3 miles**) take third exit onto Quinton Express-  
way - A456 (signed B'ham)  
After further **0.9 miles** take second exit on roundabout onto Quinton Ex-  
pressway - A456. Enter Quinton.  
After further **0.8 miles** bear right onto Hagley Road West - A456. Enter  
Oldbury.  
After further **0.2 miles** take first exit from Hagley Road West roundabout onto  
Hagley Road West - A456 (signed City Centre).  
Follow A456 for a further **3.9 miles** through Smethwick (signed City Centre)  
To Paradise Circus then take the second exit onto Great Charles Street  
Queensway - A38 (Signed Inner Ring Road, The North and London M6)  
Follow A38 (signed City Centre, Walsall A34, Ring Road) for further **0.75  
miles** and branch left and take 4th exit at Lancaster Circus Roundabout and  
merge onto St. Chads Queensway - A38 (signed Inner Ring Road, The  
South West M5, Wolverhampton A456)  
After **0.4 miles** branch left (Signed Jewellery Quarter, West Bromwich) and  
turn left into Whittall Street. At the end of Whittall Street turn right onto

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\*\* From M6 (J6) keep right to join A38(M) motorway (signed B'ham Central)  
After **2.2 miles** Continue forward onto Corporation Street - A38 (signed City Centre, Bromsgrove) entering B'ham.

After about **0.5 miles** branch left (signed Jewellery Quarter, West Bromwich), then turn left into Whittall Street. At the bottom of Whittall Street, Turn right into Steelhouse Lane and the "Queen's Head" is about **100 yds.** on left.

Birmingham is well served by main-line railways and there is a good bus and metro service between stations and the city centre.



**N**ews is out that D-Wave Systems have produced the first commercial Quantum Computer called the Orion. This machine is situated on the Island of Vancouver where it was manufactured. Computing time on it can be bought via fibre-optic links.

Now for some Physics: Heisenberg theorised that if you could look inside an atom, you could measure the speed of its component parts, or their position, but not both at the same time. This is because the smallest probe we have is the photon, and if you shine one at an atom you must interfere with it, making direct observations impossible. This is the Uncertainty Principle, which has held out since its inception and which is illustrated by the famous model of Schroedinger's cat: Imagine an atom is a glass box containing a cat and a vial of poison. To open the box you break it and the vial and the cat dies. But the exact description of an atom's constituents is impossible because of the uncertainty principle mentioned above. Therefore Quantum Physics defines the parts of an atom in terms of probability. Therefore, statistics prove that the cat is in all states between alive and dead, and bearing in mind the principle of entropies, a dead cat is a dead cat that cannot be half dead or both!

To see finer details, we would have to use suitable sub-atomic particles, none of which we can use non-destructively at this moment in time. So, unless someone has made a major breakthrough in Atomic Physics Theory, we cannot build Quantum Computers yet. Furthermore, photons are contrarying too: Young placed a screen with two slots in it before a light-source and lit the bulb. Photons travelled through the slots and drew interference fringes on the screen placed behind it. This proved, (and De Broglie got a Nobel Prize for it), that photons behave both as waves and particles! Now such waves are not particulate (whole) numbers but functions of waves. So to describe them, we cannot simply use binary series. In Binary, there is no number between zero and one. But to describe subatomic Quanta, we must use such imaginary numbers... (a bit like using PRINT RND on the QL).

Field theory is still in its infancy. I tried copying Young's experiment in my loft using a slide projector. But instead of using slots, I placed two large cardboard sheets between the projector and screen, each with a tiny pinhole in its centre. To my surprise, the entire slide was visible on the screen, despite the fact that it was being lit by a mere pin-wide parallel light beam! Intrigued, I took the lens out of the projector to defocus the image,



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but the full slide image still appeared perfectly clearly on the screen!

Photons get up to all sorts of tricks (as can be seen with holograms). Whilst examining an assemblage of hexagonal quartz crystals from very close up, I realised that the wall and its ornaments in front of me was displaced to the right and upwards and the complete image was wrapped onto a virtual sphere!! This says strange things about hexagonal crystal lattices, reflections and refractions, and I doubt if anyone can show me an exact description of just why those phenomena happened in my attic. That is to say that breakthroughs in physics, (as in science in general), are always possible, but viable Quantum computers using probabilist transistors are still very unlikely.

It turns out that the Orion chip was in fact made by the NASA who have a lot of experience of quasi-absolute zero technology needed for deep space probes. Now he who talks of absolute zero is getting into the realm of super conduction. This phenomenon means that at such low temperatures, electrical resistance almost disappears. This is because electrons normally follow outer orbital paths, fumbling from vibrating molecule to molecule in a very tortuous way, moving very slowly along the conductor because of the chaotic trajectories involved. If we used superconducting materials, the electrons would link in pairs and follow quasi wave-guides through the crystal structure at VERY high speeds. So super-cooled chips are theoretically very much faster than ordinary chips.

So what in fact has the NASA made? They admit using a super cooled chip, but probabilist transistors? (otherwise called Qubits)? There is talk of obtaining tens of thousands of gigaflops per second as performance within a year. If this were true we could all scrap our PCs and just link up to the NASA device to do a quiet bit of computing from time to time. And code breakers and pirates would be unable to tap our calls! (Even though recent experiments contradict this).

But the most exciting breakthroughs in computing will only come when we are capable of producing self-modifying retroactive arborescent parallel calculators like the human brain. Like poly-lingual grammar, we are born with certain innate calculating structures revealed in particular by autistic people. When we will have understood the logic circuits involved in such innate brain structures, we will be well on the way to building intelligent computer chips. And for this we will have to wait for DNA chips...Did somebody mention Quanta funding?

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Seriously, I would like to see Quanta sponsor the construction of a prototype portable QL for the third world. That is, an indestructible case, keyboard and screen made by experienced tech-toy makers, a motherboard designed by our QL boffins, Romdisk and USB sockets. The whole lot to be run by SMSQ/E, QDT and sold for 100 euros: If the market research is right, we should sell hundreds of millions and cause a massive upheaval in PC computing that could force windows to streamline, downsize, standardise and rationalise program interfaces if it were to run on the new machine.

At 100 euros, all the QL community could easily afford to buy and develop the system! To get new blood we need a new market-base. Please discuss this and send your opinions and observations to the Editor...

## **SUBGROUP MEETINGS**

---

### **THE WEST MIDLANDS QL USER GROUP**

**T**his long-running group has moved back to its previous venue, the Queens Head pub in the City Centre. Meetings remain open to Quanta members and non-members alike. The Queens Head is in Steelhouse Lane, Central Birmingham, four minutes walk from Snow Hill main-line railway station and has ample street parking nearby.

Meetings are usually on the first and third Monday of each month (but not on Bank holidays unless the previous one was cancelled for that reason). After your first meeting you're expected to pay £1 each time towards the organisation and monthly newsletter costs - except once a year when the group pays all those who attend a pound instead (We provide food twice a year for those who attend the AGM and the group's birthday party) and at meetings we discuss all sorts of things, QL-related and otherwise, usually from about 8:20 pm onwards till 10:30 or later. The group owns QL hardware, a disk library and subscribes to relevant magazines. People can join the mailing list for £3.50 per year, even if they can't attend regularly.

The contact number remains Mike Bedford White's, on 0121 708 2560, anytime after 11 am.

### **QUANTA DORSET SUBGROUP**

**M**eetings are held, on the second Sunday of each month at the Merley Community Centre in Harrier Drive, Merley, just south of Wimborne Minster. Time: 2.00pm to 5.00pm. All are welcome.

John Meadows Tel: 01202 576189, or John Mason, 01425 275894.

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## LONDON QL AND QUANTA GROUP

**M**eetings are held in the School Room, which is the basement of the Borough Welsh Congregational Chapel, 90, Southwark Bridge Road, London SE1. This is almost opposite the junction with Marshalsea Road, at the other end of which, 5 minutes walk away, is the Borough Underground Station. Free parking is easily available in Southwark Bridge Road for road users, Cyclists are welcome.

Members currently each pay a subscription of £30 per year towards the cost of the hire of the hall and a small additional charge is made for tea/coffee - biscuits are then provided free.

Please bring your QL equipment if possible, all types welcome, e.g., PC portable running emulators. The Group has some systems stored at the venue for its use. In addition, there are lots of donated second user equipment, books, magazines, etc, available for purchase.

Time: 2.00pm to 6.00pm, on the second Sunday of the month.

No meetings are held in either December - winter break, or August - summer break. Giving 10 meetings a year.

Malcolm Cadman: Tel: 020 8691 5780; email: [QL@mcad.demon.co.uk](mailto:QL@mcad.demon.co.uk)

## NEMQLUG - THE NORTH EAST MANCHESTER QL USER GROUP

**M**eetings are held at 181, Urmston Lane, Stretford, Manchester. M32 9EH (Near Junction 7 of M60 Motorway - Was Junction 7 M63 Motorway). Our informal meetings start at 7 p.m. and finish at 11 p.m. All welcome.

Meets on the last Thursday of each month (except December).

John/Sarah Gilpin 0161-865 2872 ([secretary@quanta.org.uk](mailto:secretary@quanta.org.uk))

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## SCOTTISH QL USERS GROUP

**S**QLUG meets at George Gwilt's home every second Sunday in the month. Please contact George Gwilt before coming to get the location.

Geogwilt@aol.com

## SOLENT SUBGROUP

**M**eets at Botley Market Hall, all welcome. Park at the back and use side entrance.

1st Saturday of the month from 2.00 pm to 6.00 pm.

Graham Evans, Tel: 023 8040 3350.

## SURREY QUANTA SUBGROUP (SQSG)

**V**enue is St Giles Church Hall, Ashtead. (This is the other side, towards the downs, of the main Epsom - Leatherhead road, up Park Lane which is at the Epsom end of the town).

From 8.00 to 10.30 pm on the last Wednesday of each month, except December.

Ken Bain 01932 347 432 (to midnight), kenb@bcs.org.uk

## SUSSEX QL USER GROUP

**C**urrently without a meeting place, anyone interested should contact Keith Mitchell or Roy Wood.

Roy Wood, 01273 386030 or Keith Mitchell, 01903 742263.